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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,043	03/11/2004	Gary Opperman	13288.29US01	8599
23552	7590	09/18/2006	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			HILL, KEVIN KAI	
			ART UNIT	PAPER NUMBER

1633

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/800,043	Applicant(s) OPPERMAN ET AL.	
	Examiner Kevin K. Hill, Ph.D.	Art Unit 1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-53 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Detailed Action

Claim 51 appears to contain a typographical error, in that it is dependent on Claim 56. However, no such Claim 56 exists. Rather, the Examiner interprets Claim 51 to be dependent on *Claim 46* [emphasis added]. If the Examiner's interpretation is in error, the Examiner respectfully requests Applicant to notify the Examiner in response to this office action. It is suggested that the claim language be corrected so as to place the application in better form for examination.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-21 and 42-45, drawn to a composition comprising a compound suitable for being immobilized on support and an organic anion of Formula I: $R(X)_m(Y)_n$, and a method of forming spots of said compound on a surface, classified in class 536, subclass 23.1.
- II. Claims 22-41 and 46-49, drawn to a composition comprising a compound suitable for being immobilized on support and a neutral hydrophilic polymer of Formula V, and a method of forming spots of said compound on a surface, classified in class 536, subclass 23.1.
- III. Claims 50 and 52, drawn to a plurality of spots on a solid support, one or more of the spots comprising a compound suitable for being immobilized on support and an organic anion of Formula I: $R(X)_m(Y)_n$, classified in class 536, subclass 23.1.
- IV. Claims 51 and 53, drawn to a plurality of spots on a solid support, one or more of the spots comprising a compound suitable for being immobilized on support and a neutral hydrophilic polymer of Formula V, classified in class 536, subclass 23.1.

Inventions I and II, Inventions III and IV, Inventions I and IV, and Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the Group I method is distinctly different in design and uses distinctly different materials with distinctly different modes of operation than the Group II method and the compositions used in the Group II method. Similarly, the Group III array is of materially different design, mode of operation and effect than the Group IV array, as the Groups III and IV agents will affect the quality, stability and performance of the arrays by distinctly different mechanisms. Furthermore, the array of spots represented by Groups III and IV may consist of small peptides, large peptides or proteins, small nucleic acids, large nucleic acids, chemically-modified drug/nucleic acid compounds, for example. The Groups I and II methods, respectively, use materials of distinctly different design and effect, and thus yield products that are of distinctly different design and effect than, respectively, the Groups IV and III products.

A search for a composition comprising a compound suitable for being immobilized on support and an organic anion of Formula I: $R(X)_m(Y)_n$ would not be co-extensive with a search for a composition comprising a compound suitable for being immobilized on support and a neutral hydrophilic polymer of Formula V. Further, a reference rendering a plurality of spots on a solid support, one or more of the spots comprising a compound suitable for being immobilized on support and a neutral hydrophilic polymer of Formula V as anticipated or obvious over the prior art would not necessarily also render a plurality of spots on a solid support, one or more of the spots comprising a compound suitable for being immobilized on support and an organic anion of Formula I: $R(X)_m(Y)_n$ as anticipated or obvious over the prior art. Because these inventions are distinct for reasons given above, and because a search of one does not necessarily overlap with that of another, it would be unduly burdensome for the examiner to search and examine all the subject matter being sought in the presently pending claims and thus, restriction for examination purposes as indicated is proper.

Inventions I and III are related as process of making and product made. Similarly, Inventions II and IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be

used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the Groups I and II methods of forming spots on a solid support can each be used to make materially different products, such as RNA arrays, peptide-nucleic acid arrays, DNA arrays, oligonucleotide arrays, plasmid arrays, for example.

A search for a plurality of spots on a solid support, one or more of the spots comprising a compound suitable for being immobilized on support and a neutral hydrophilic polymer of Formula V would not be co-extensive with a search for a method of forming spots of a compound suitable for being immobilized on support and a neutral hydrophilic polymer of Formula V. Further, a reference rendering a method of forming spots of a composition comprising a compound suitable for being immobilized on support and an organic anion of Formula I: $R(X)_m(Y)_n$ as anticipated or obvious over the prior art would not necessarily also render a plurality of spots on a solid support, one or more of the spots comprising a specific compound suitable for being immobilized on support and an organic anion of Formula I: $R(X)_m(Y)_n$ as anticipated or obvious over the prior art. Because these inventions are distinct for reasons given above, and because a search of one does not necessarily overlap with that of another, it would be unduly burdensome for the examiner to search and examine all the subject matter being sought in the presently pending claims and thus, restriction for examination purposes as indicated is proper.

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102,

103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained.

Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

2. Should Applicant elect Invention(s) I, further group restriction is required under 35 U.S.C. 121. Claim(s) 1 is generic to structures of the organic anion of Formula I: $R(X)_m(Y)_n$. Applicant is required to elect a single disclosed structural formula for prosecution on the merits to which the claims shall be restricted. Therefore, election is required of Invention I and one of Invention I, inventive groups (a)-(b), specifically:

- a) the structure of Formula II, as recited in Claims 4-6, or
- b) the structure of Formula III, as recited in Claims 7-8 and 19-20.

Claim 1 links Invention I, inventive groups (a)-(b).

Invention I, inventive groups (a)-(b) are distinct because,

Invention I, inventive groups (a)-(b) are unrelated. The numerous variations in the number, position and type of heteroatoms, ring structures, and linear or branched carbon chains result in a vast genus of structurally unrelated molecules that are not obvious variations of each other because one skilled in the art does not expect an aromatic system comprising sulphur heteroatoms and alcohol groups to have the same chemical properties as aromatic ring system comprising phosphinate heteroatoms and borane groups. Each of the radical species moieties confers a unique, non-obvious property onto the organic anion that will directly impact the activity of the compound.

Given the breadth of the claimed, unrelated structures, a search for all possible species at each of the recited radical groups imposes an exceptional burden on the Office. Because these inventions are distinct for reasons given above, and because a search of one does not necessarily overlap with that of another, it would be unduly burdensome for the examiner to search and examine all the subject matter being sought in the presently pending claims and thus, restriction for examination purposes as indicated.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed structural formula, even though this requirement is traversed. Failure to elect a structural formula from Invention I, inventive groups (a)-(b) above consonant with Applicant's elected Invention, may result in a notice of non-responsive amendment.

Claim 1 links Invention I, inventive groups (a)-(b). The restriction requirement between the linked inventions is subject to the nonallowance of the linking claim(s), Claim 1. Upon the indication of allowability of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise requiring all the limitations of the allowable linking claim(s) will be rejoined and fully examined for patentability in accordance with 37 CFR 1.104. Claims that require all the limitations of an allowable linking claim will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

Applicant(s) are advised that if any claim(s) including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

3. **Should Applicant elect any of Inventions I or III and either inventive group (a) or (b) from above, a species election is required under 35 USC 121.** Currently, Claims 1, 16, 42

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and 52 of this application is directed to a plurality of disclosed, patentably distinct (R), (X) and (Y) radicals of Formula I: $R(X)_m(Y)_n$ that prohibit proper examination of this claim. Therefore, election is required under 35 U.S.C. 121 of one (R), (X), (Y), (Z) and (A) radicals consonant with Applicant's elected invention for prosecution on the merits to which the claims shall be restricted, specifically:

- i) elect one (R) radical, as recited in Claims 1, 16, 42, 52,
- ii) elect one (m) value of (X) radicals, from 1 to 7, as recited in Claims 1, 16, 42 and 52,
- iii) for the elected (m) value of (X) radical(s) elected in (ii) above, elect one (X) radical species for each (X) radical from the list of (X) radicals as recited in Claims 1-2, 5, 16, 42, 52,
- iv) elect one (n) value of (Y) radicals of the organic anion of Formula I,
- v) for the elected (n) value of (Y) radicals elected in (iv) above, elect one (Y) radical species for each (Y) radical from the list of (Y) radicals recited in Claims 1, 3, 16, 42, 52,
- vi) should Applicant elect the structural Formula III from inventive group (b) above, then elect one (Z) radical from the list of (Z) radicals recited in Claims 7 and 19, and
- vii) should Applicant elect the structural Formula III from inventive group (b) above, then elect one (A) radical from the list of (A) radicals recited in Claims 7 and 19.

The numerous variations in the number, position and type of heteroatoms, ring structures, and linear or branched carbon chains result in a vast genus of structurally unrelated molecules that are not obvious variations of each other because one skilled in the art does not expect aromatic ring systems comprising phenol substituted with strongly electron withdrawing groups and boric acid to have the same chemical properties as aromatic ring systems comprising thiocarboxylate and ether. Each of the radical species moieties confers a unique, non-obvious property onto the organic anion that will directly impact the activity of the compound.

Given the breadth of the claimed, unrelated structures, a search for all possible species at each of the recited radical groups imposes an exceptional burden on the Office. Because these inventions are distinct for reasons given above, and because a search of one does not necessarily overlap with that of another species, it would be unduly burdensome for the examiner to search

and examine all the subject matter being sought in the presently pending claims and thus, restriction for examination purposes as indicated is proper.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed (R), (X), (Y), (Z) and (A) radical species, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election. Failure to elect (R), (X), (Y), (Z) and (A) radical species consonant with Applicant's elected invention may result in a notice of non-responsive amendment.

Should Applicant elect Invention I and the inventive group (b) from above and the corresponding (R), (X), (Y), (Z) and (A) radical species from (i)-(vii) from above, a further species election is required under 35 USC 121. Currently, Claims 8 and 20 of this application are directed to a plurality of disclosed, patentably distinct organic anion compositions, wherein the organic anion may or may not be present as a mixture of elected organic anions that prohibit proper examination of this claim. Therefore, election is required under 35 U.S.C. 121 of one organic anion composition from the list consisting of the organic anions recited in Claims 8 and 20 consonant with Applicant's elected invention for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable, specifically:

- i) glucose-1-phosphate,
- ii) glucose-6-phosphate,
- iii) phytate, or
- iv) one explicit mixture of (i)-(iii) above.

In the instant case, each species is structurally distinct and confers distinctly different properties on the composition. A search for glucose-1-phosphate would not be co-extensive with a search for phytate. Further, a reference rendering glucose-6-phosphate as anticipated or

obvious over the prior art would not necessarily also render a mixture of phytate and glucose-1-phosphate as anticipated or obvious over the prior art. Because these inventions are distinct for reasons given above, and because a search of one does not necessarily overlap with that of another species, it would be unduly burdensome for the examiner to search and examine all the subject matter being sought in the presently pending claims and thus, restriction for examination purposes as indicated is proper.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed organic anion composition species, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election. Failure to elect species consonant with Applicant's elected invention may result in a notice of non-responsive amendment.

Should Applicant elect any of Inventions II or IV, a species election is required under 35 USC 121. Currently, Claim 22, 34, 46 and 53 of this application is directed to a plurality of disclosed, patentably distinct (A), (n) and (B) radicals that prohibit proper examination of this claim. Therefore, election is required under 35 U.S.C. 121 of one (A), (n) and (B) radical from the list consisting of the (A), (n) and (B) radical recited in Claims 22-23, 34-35, 46 and 53 consonant with Applicant's elected invention for prosecution on the merits to which the claims shall be restricted, specifically:

- i) elect one (A) radical, as recited in Claims 22, 34, 46 and 53,
- ii) elect one (n) value, from 100 to 5000, as recited in Claims 22, 34, 46 and 53, and
- iii) elect one (B) radical composition from the list of (B) radicals recited in Claims 22, 34, 46 and 53.

The numerous variations in the number, position and type of heteroatoms, and linear or branched carbon chains result in a vast genus of structurally unrelated molecules that are not

obvious variations of each other because one skilled in the art does not expect hydrophilic polymer of 100 repeating units comprising borane to have the same chemical properties as a hydrophilic polymer of 5000 repeating units comprising a mixture of sulfone and amine oxide radicals. Each of the radical species moieties confers a unique, non-obvious property onto the organic anion that will directly impact the activity of the compound.

Given the breadth of the claimed, unrelated structures, a search for all possible species at each of the recited radical groups imposes an exceptional burden on the Office. Because these inventions are distinct for reasons given above, and because a search of one does not necessarily overlap with that of another species, it would be unduly burdensome for the examiner to search and examine all the subject matter being sought in the presently pending claims and thus, restriction for examination purposes as indicated is proper.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed (A), (n) and (B) radical species, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election. Failure to elect species consonant with Applicant's elected invention may result in a notice of non-responsive amendment.

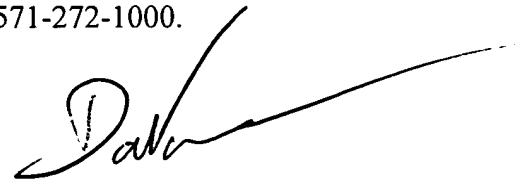
Should Applicant traverse on the ground that the species are not patentably distinct, Applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin K. Hill, Ph.D. whose telephone number is 571-272-8036. The examiner can normally be reached on Monday through Friday, between 9:00am-6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave T. Nguyen can be reached on 571-272-0731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



DAVE TRONG NGUYEN
SUPERVISORY PATENT EXAMINER